Please amend claims 8, 9, and 10 as follows:

--8. (Amended) The nucleic acid of claim 1, wherein the mutant human MCH1 receptor comprises an amino acid sequence as shown in Figure 13 (SEQ ID NO: 26).--

B15

--9. (Amended) The nucleic acid of claim 1, wherein the mutant human MCH1 receptor comprises an amino acid sequence as shown in Figure 14 (SEQ ID NO: 27).--

--10. (Amended) The nucleic acid of claim 1, wherein the mutant human MCH1 receptor comprises an amino acid sequence as shown in Figure 15 (SEQ ID NO: 28).--

Applicants attach hereto as **Exhibit 2** a marked-up version of the amended claims showing the changes made.

REMARKS

Claims 1-11, 32-34, 41, 43, 47, 83, 96 and 97 were pending in the subject application. By this amendment, applicants have amended claims 8, 9, and 10 to change SEQ ID NOs to correspond to the Sequence Listing attached hereto as **Exhibit A.** Accordingly, upon entry of this amendment, claims 1-7, 8-10 as amended, 11, 32-34, 41, 43, 47, 83, 96 and 97 will be pending in the subject application.

Applicants have amended the Sequence Listing as follows. The previous version of the Sequence Listing listed the sequence for SEQ ID NO: 24 as "000". Applicants have deleted previous SEQ ID NO: 24 and renumbered previous SEQ ID NO: 25 through SEQ ID NO: 29 as new SEQ ID NO: 24 through SEQ ID NO: 28.

Applicants have amended the specification to delete reference to old SEQ ID NO: 24 on page 74, line 19, and to renumber previous SEQ ID NO: 25 through SEQ ID NO: 29 as new SEQ ID NO: 24 through SEQ ID NO: 28. Applicants have amended claims 8-10 to renumber previous SEQ ID NO: 27 through SEQ ID NO: 29 as new SEQ ID NO: 26 through SEQ ID NO: 28.

Applicants have amended the specification to replace reference to Figure 7, Figure 8, and Figure 10 with reference to Figure 7A-7D, Figure 8A-8B, and Figure 10A-10B, respectively, consistent with the substitute drawings attached hereto as **Exhibit D**.

Applicants maintain that these amendments to the specification and to the claims raise no issue of new matter and respectfully request that the Amendment be entered.

The Notice to File Missing Parts of Application indicates that the oath or declaration is unsigned. Applicants attach hereto a copy of the Notice as **Exhibit B**. In response, applicants submit as **Exhibit C** hereto a signed Declaration and Power of Attorney pursuant to 37 C.F.R. §1.53(f). In compliance with 37 C.F.R. §1.63, the Declaration refers to the application's above-identified serial number and filing date.

The surcharge under 37 C.F.R. §1.16(e) for submitting the enclosed Declaration for a small entity is SIXTY-FIVE DOLLARS ($65.00) and a check in this amount is enclosed.

The Notice to File Missing Parts of Application indicates that substitute drawings in compliance with 37 C.F.R. §1.84 are required. In response, applicants attached hereto as **Exhibit D** substitute drawings in compliance with 37 C.F.R. §1.84.

The Notice to File Missing Parts of Application indicates that the application does not contain a statement that the content of the Sequence Listing information recorded in computer readable form is identical to the written Sequence Listing. In response applicants submit as **Exhibit E** a Statement in accordance with 37 C.F.R. §1.821(f).

The Notice to File Missing Parts of Application indicates that a copy of the Sequence Listing in computer readable form has not been submitted as required by 37 C.F.R. §1.821(e). In response applicants submit as **Exhibit F** a computer readable form of the Sequence Listing.

The computer readable format Sequence Listing (**Exhibit F**) and paper copy Sequence Listing (**Exhibit A**) contain no new matter as required by 37 C.F.R. §1.821 and 37 C.F.R. §1.825.

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invite the Examiner to telephone him at the number provided below.

No fee, other than the enclosed fee of $65.00, is deemed necessary in connection with the filing of this Amendment. If an additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

9/17/01
John P. White Date
Reg. No. 28,678

John P. White
Registration No. 28,678
Attorney for Applicants
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, New York 10036
(212) 278-0400

Marked-up Version of Amendments to the Specification

In the following text which contains underlying, deletions to the text are indicated by square brackets and additions are indicated by *italics*.

On page 27, line 28:

--[**Figure 7**] ***Figure 7A-7D*** --

On page 27, line 31:

--[**Figure 8A**] ***Figure 8A-8B*** --

On page 28, line 5:

--[**Figure 10**] ***Figure 10A-10B*** --

On page 28, lines 22-24:

--**Figure 13**

Amino acid sequence (SEQ ID NO: [27] *26*) of the mutant human MCH1 receptor encoded by plasmid R106.--

On page 28, lines 26-28:

--**Figure 14**

Amino acid sequence (SEQ ID NO: [28] *27*) of the mutant human MCH1 receptor encoded by plasmid R114.--

On page 28, lines 30-32:

--**Figure 15**

Amino acid sequence (SEQ ID NO: [29] *28*) of the mutant human MCH1 receptor encoded by plasmid BO120.--

In the following text, deletions to the text are indicated by square brackets and additions are indicated by underlying.

On page 34, line 34, through page 35, line 2:
--In one embodiment, the mutant human MCH1 receptor comprises an amino acid sequence as shown in Figure 13 (SEQ ID NO: [27] 26). In another embodiment, the mutant human MCH1 receptor comprises an amino acid sequence as shown in Figure 14 (SEQ ID NO: [28] 27). In still another embodiment, the mutant human MCH1 receptor comprises an amino acid sequence as shown in Figure 15 (SEQ ID NO: [29] 28).--

On page 42, line 21, through page 43, line 36:
--This invention provides a process for identifying a chemical compound which specifically binds to a mammalian MCH1 receptor which comprises contacting cells comprising DNA encoding, and expressing on their cell surface, the mammalian MCH1 receptor, with the compound under conditions suitable for binding, and detecting specific binding of the chemical compound to the mammalian MCH1 receptor, wherein the cells do not normally express the mammalian MCH1 receptor and the DNA encoding the mammalian MCH1 receptor (a) hybridizes to a nucleic acid having the defined sequence shown in Figure 1 (SEQ ID NO: 1) under low stringency conditions or a sequence complementary thereto and (b) is further characterized by its ability to cause a change in the pH of a culture of CHO cells when a MCH1 ligand is added to the culture and the CHO cells contain the nucleic acid which hybridized to the nucleic acid having the defined sequence or its complement. This invention also provides a process for identifying a chemical compound which specifically binds to a mammalian MCH1 receptor which comprises contacting a membrane preparation from cells comprising DNA encoding, and expressing on their cell surface, the mammalian MCH1 receptor, with the compound under conditions suitable for binding, and detecting specific binding of the chemical compound to the mammalian MCH1

receptor, wherein the cells do not normally express the mammalian MCH1 receptor and the DNA encoding the mammalian MCH1 receptor (a) hybridizes to a nucleic acid having the defined sequence shown in Figure 1 (SEQ ID NO: 1) under low stringency conditions or a sequence complementary thereto and (b) is further characterized by its ability to cause a change in the pH of a culture of CHO cells when a MCH1 ligand is added to the culture and the CHO cells contain the nucleic acid which hybridized to the nucleic acid having the defined sequence or its complement. In one embodiment, the MCH1 receptor is a human MCH1 receptor. In another embodiment, the MCH1 receptor is a rat MCH1 receptor. In another embodiment, the mammalian MCH1 receptor comprises substantially the same amino acid sequence as the sequence of the human MCH1 receptor encoded by plasmid pEXJ.HR-TL231. In a further embodiment, the mammalian MCH1 receptor comprises substantially the same amino acid sequence as that shown in Figure 2 (SEQ ID NO: 2). In another embodiment, the mammalian MCH1 receptor comprises the amino acid sequence shown in Figure 2 (SEQ ID NO: 2). In a different embodiment, the mammalian MCH1 receptor comprises the amino acid sequence shown in Figure 13 (SEQ ID NO: [27] 26). In another embodiment, the mammalian MCH1 receptor comprises the amino acid sequence shown in Figure 14 (SEQ ID NO: [28] 27). In still another embodiment, the mammalian MCH1 receptor comprises the amino acid sequence shown in Figure 15 (SEQ ID NO: [29] 28). In one embodiment, the compound is not previously known to bind to a mammalian MCH1 receptor. This invention further provides a compound identified by the above-described processes.--

On page 74, lines 4-19:

--A short form of the human MCH1 receptor expressing only the most downstream of the three potential initiating methionines was generated as follows. TL231 was amplified with BB1122 (a forward primer beginning 10 nucleotides upstream of the third methionine in TL231, and also incorporating a *Hind*III site) and BB1123 (a

reverse primer in the second transmembrane domain) and the resulting product digested with *Hind*III and *Bgl*IIA. PCR was performed with the Expand Long Template PCR System (Roche Molecular Biochemicals, Indianapolis, IN) under the following conditions: 20 seconds at 94°C, 1 minute at 68°C for 40 cycles, with a pre- and post-incubation of 5 minutes at 94°C and 7 minutes at 68°C respectively. The 270 bp product was gel purified and ligated to a 4 kb *Hind*III/*Bgl*II restriction fragment from TL231. The resulting construct was named BO120 [(SEQ ID NO: 24)].--

On page 74, lines 24-25:
--BB1122 5'- TGACACTAAGCTTCACTGGCTGGATGGACCTGGAAGC -3' (SEQ ID NO: [25] 24)--

On page 74, line 27:
--BB1123 5'- GCCCAGGAGAAAGAGGAGATCTAC -3'(SEQ ID NO: [26] 25)--

On page 99, lines 12-18:
--Several additional compounds were tested for their ability to activate MCH1. No dose-responsiveness of inositol phosphate formation could be detected in Cos-7 cells transfected with MCH1 when challenged with somatostatin, haloperidol, or dynorphin A1-13, discounting the possibility that MCH1 encodes a somatostatin-like or opioid-like or sigma-like GPCR subtype [(Figure 7)] (Figure 7A-D).--

On page 99, lines 19-29:
--CHO cells were transiently transfected with MCH1 using lipofectant, challenged with increasing concentrations of MCH or Phe^{13},Tyr^{19}-MCH, and subsequently monitored for changes in extracellular acidification rates. Both ligands produced a dose-dependent increase in acidification rate with an EC_{50} value of 8.6 nM for MCH and 51.8 nM for Phe^{13},Tyr^{19}-MCH. Neither native CHO cells or mock (pEXJ) transfected CHO cells exhibited a change in

acidification rate when exposed to MCH or Phe^{13},Tyr^{19}-MCH [(Figure 8)] (Figure 8A-8B).--

On page 100, lines 8-14:
--Membranes harvested from Cos-7 cells transfected with MCH1 by the DEAE-dextran method exhibited specific binding for [^{125}I]Phe^{13}-Tyr^{19}-MCH (about 80 fmol/mg membrane protein) over mock-transfected cells (about 20 fmol/mg membrane protein) at 0.1 nM radioligand concentration. Specific [^{125}I]Phe^{13}-Tyr^{19}-MCH binding was about 70% of total binding at a radioligand concentration of 0.1 nM [(Figure 10)] (Figure 10A-10B).--